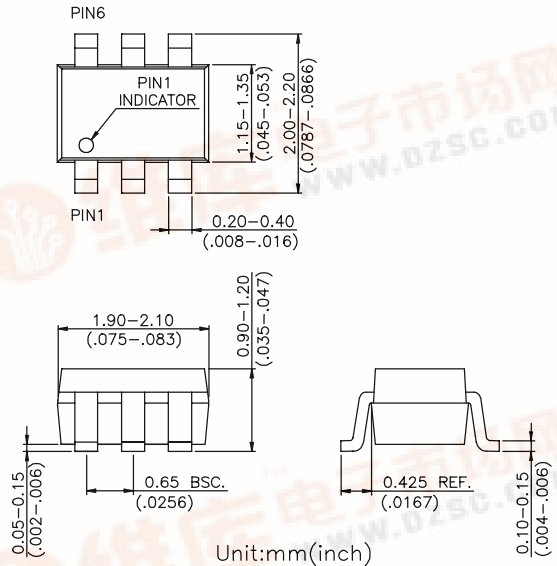


Features

- **Low Insertion Loss:** 0.35dB @ 2GHz
- **Isolation:** 26dB @ 2GHz
- **P1dB:** +25dBm Typical @ +3V
- **IP3:** 43dBm
- **Low DC Power Consumption**
- **Low Cost SOT-363 Plastic Package**

SOT-363



Description

The HWS306 is a GaAs MMIC SPDT switch in a low cost SOT-363 plastic package. The HWS306 features low insertion loss with very low DC power consumption. This general purpose switch can be used in analog and digital wireless communication systems.

Electrical Specifications at 25°C with 0, +3V Control Voltages

| Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|---|--|------|--------|------|------|
| Insertion Loss | DC-2.0GHz | | 0.35 | 0.55 | dB |
| | DC-2.5GHz | | 0.40 | 0.60 | dB |
| Isolation | DC-1.0GHz | 25 | 28 | | dB |
| | DC-2.0GHz | 22 | 25 | | dB |
| | DC-2.5GHz | 21 | 23 | | dB |
| VSWR | DC-2.5GHz | | 1.20:1 | | |
| Input Power for One dB Compression | 0/+3V | | 25 | | dBm |
| | 0/+5V | | 30 | | |
| 3rd Order Intermodulation Intercept Point (IP3) | 0.5-2.5GHz (for two-tone input power up to +5dBm) | | 43 | | dBm |
| | 0/+3V 0/+5V | | 48 | | |
| Switching Time | | | 50 | | ns |
| Control Current | | | 5 | 50 | µA |

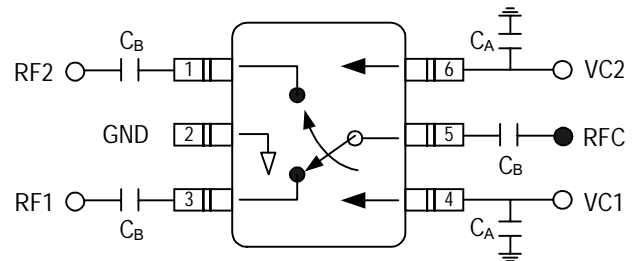
Note: All measurements made in a 50Ω system with 0/+3V control voltages, unless otherwise specified.



Absolute Maximum Ratings

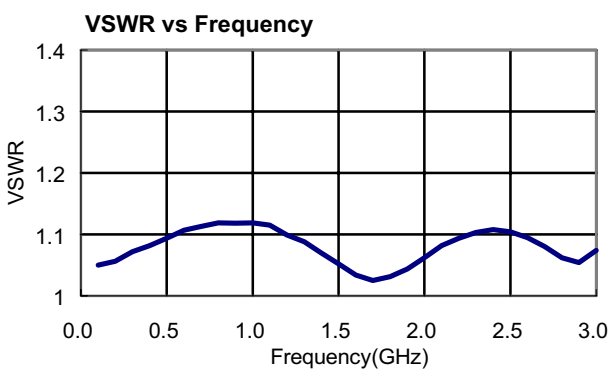
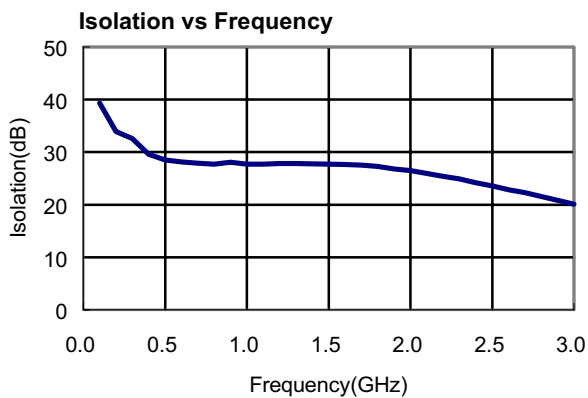
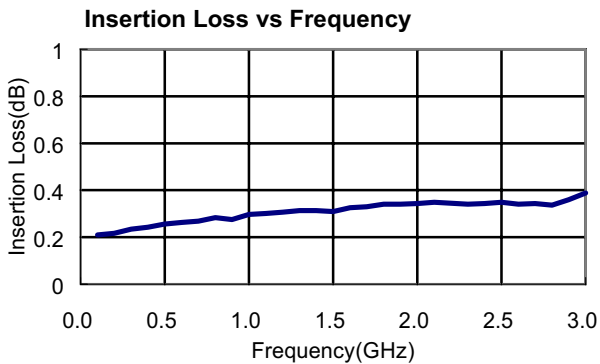
| Parameter | Absolute Maximum |
|---|------------------|
| RF Input Power 0.05GHz 0.5-2.5GHz | +24dBm +30dBm |
| Control Voltage | +8V |
| Operating Temperature | -40°C to +85°C |
| Storage Temperature | -65°C to +150°C |

Pin Out



DC blocking capacitors C_B are required on all RF ports.
 $C_B = C_A = 51\text{pF}$ for operating frequency $> 500\text{MHz}$.

Typical Performance @ +25°C



Truth Table

| VC1 | VC2 | RFC-RF1 | RFC-RF2 |
|-------------------|-------------------|----------------|----------------|
| V_{High} | 0 | Insertion Loss | Isolation |
| 0 | V_{High} | Isolation | Insertion Loss |

$V_{\text{High}} = +3\text{V to } +5\text{V}$